DOCUMENT RESUME

ED 210 623 CS 006 348

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TITLE A Study of the Relation of Interest and Incentive to the Reading Comprehension of Average and Below-Average Readers.
PUB DATE Oct 81
NOTE 10p.; Paper presented at the Annual Meeting of the Northeastern Educational Research Association (12th, Ellenville, NY, October 1981).

EDRS PRICE MF01/PC01 plus Postage.
DESCRIPTORS Elementary Education; Grade 5; *Incentives; Intermediate Grades; *Motivation Techniques; Positive Reinforcement; Reading Achievement; *Reading Comprehension; *Reading Interests; *Reading Research; *Student Motivation

ABSTRACT

A study explored the relationship of interest in story content, external incentives, and reading level to elementary school children's reading performance. The subjects, 75 fifth grade students who were either average or below-average readers, were asked to rate the content of five stories from "most" to "least" interesting and were then assigned to a group in which they read stories with their most or least interesting content choice. The subjects' reading comprehension was measured by a cloze procedure. Two incentive conditions were used. In the first, a criterion contingency, each subject was told that he or she would receive a reward after reading each paragraph of the story if he or she had as many or more correct answers than the announced criterion for that paragraph. In the second condition, the control, the subject received a reward after reading the entire story, but no criterion for correct answers was used. Results showed that external incentives enhanced reading performance for average as well as below-average readers, while interest in story content did not appear to be a significant factor in the study. All below-average readers had higher comprehension scores than did the average readers. (FL)

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A Study of the Relation of Interest and Incentive to the Reading Comprehension of Average and Below-Average Readers 1.

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ED210623

It is widely accepted by educators that aspects of motivation, such as interest in story content and externally given incentives, will enhance children's reading performance. Empirical studies of interest however, give contradictory findings, ranging from failure to confirm such a relationship to reading to findings of a relationship for only one special group of readers, such as below-average or superior readers (Koch, 1974; Bernstein, 1974; Stevens, 1980). It is thought that these findings may in part due to the difficulty in measuring interest and/or to possible confounding variables, such as the basic knowledge of the reader and the varying effects that interest may have on comprehension of a specific passage.

Another aspect of motivation, the incentive condition present during the performance, also shows an unclear relation to reading comprehension. Social learning theorists view reinforcement as having incentive and informative roles; others relate incentives to affective conditioning (Rosenthal and Zimmerman, 1978; Mowrer, 1960). McLoyd found some interaction between interest of reading task and value of the reward in relation to number of words read and time on task (McLoyd, 1979). Although there is some evidence that poor readers

1. Presented at the Twelfth Annual Convocation of NERA at Ellenville, N.Y., October 22, 1981.

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persist longer than good readers for external incentives (Johnson, 1981), few such studies have used reading comprehension as a dependent variable. The present authors wished to explore the relation of reading performance to a criterion contingency incentive, that is, a situation in which a criterion for the number of correct answers in comprehending a reading passage is set, followed by a tangible reward if the reader meets that goal. This aspect of incentive, which provides evaluative information about one's performance, also shows no clearcut relation to later performance, seeming to vary with task level and one's expectation of success (Meyer, 1979).

The present study is the first of a series planned to explore the relation of interest in the story content, external incentives and level of reading to comprehension and time elementary grade children. In this study the following main effect hypotheses were tested.

1. Children reading high-interest materials have higher comprehension scores than those reading low-interest materials.
2. Children given criterion contengency incentive have higher reading comprehension scores than with no stated incentive. No hypothesis was made for a main effect for reading level since the difficulty of the reading passages was to be controlled, as discussed shortly. Two interactive hypotheses were also made: one between incentive condition and reading level and the second between interest and reading level.
3. The comprehension difference between the average and below-average reading groups is greater for the incentive control situation than for the two reading groups in the criterion contingency condition, with the below-average reading group scoring lower.

4. The comprehension difference between the average and below-average reading groups is greater for the low interest situation than for the two reading groups in the high interest situation, with the below-average reading groups scoring lower. Thus it was expected that below-average reading groups would be more adversely affected by lack of incentive or low interest materials than would be the average reading groups.

No hypotheses were made concerning time spent on reading task.

Particular attention was given to development of both the interest and the reading comprehension measures.

A rating scale for interest in story content was developed after a preliminary study had identified the most frequently mentioned content areas for fifth grade boys and girls separately. Five content areas, such as sports, space, fairy tales, which represented both the boys' and girls' interests, were used and reading passages were developed for each interest area. Children in the study were asked to rate these areas from "most" to "least" interesting. Depending on the interest condition assigned in the study each child was then given his/her "most interesting" or "least interesting" choice to read.

Proficiency in reading comprehension was measured by a cloze procedure. Paragraphs of approximately 150 words were devised having 15 deletions each; every seventh word was deleted starting with the second sentence. Two sets of stories were prepared, one at middle-fourth grade reading level and one at mid-second grade level (using the Spache formula) in order that both the average and below-average readers could read their respective paragraphs with ease. Since reading material too difficult for them might be frustrating

to the below-average readers, it seemed important to provide another source of motivation to this group, i.e., that the passages could be read with ease.

Two incentive conditions were used. The first condition, devised to be a salient motivator, used a criterion contingency. The reader was told that a reward (a sticker of one's choice) would be given after he/she read each paragraph if the reader had as many or more correct answers than the announced criterion for that paragraph.

In the incentive control condition the reader received a reward (also a sticker of one's choice) after all of the three paragraphs were completed, but no criterion for correct answers or confirmation of correct answers were given.

The sample was comprised of 75 fifth-graders in an urban hispanic neighborhood. The children, all proficient English speakers, were selected as being average or below average in reading achievement, as determined by the present reacher's estimate of reading level. Average reading was defined (in may of the school year) as fifth to sixth-grade level, while below-average reading was defined as fourth grade level and below. The two groups, average and below-average readers, were then randomly assigned to one of four groups, high interest reinforcement, high interest-control, low interest-reinforcement, low interest-control.

The children were seen individually. Each was asked to rate his/her interest in the five story contents areas. Depending on the interest-incentive group, each was assigned to, he/she was then asked to read three paragraphs from one interest area and orally fill in the missing deletions in the paragraphs while reading them. The time taken and number of correct answers were recorded for each paragraph read.

The primary analysis was a 2 x 2 x 2 ANOVA with reading comprehension and reading time serving as dependent variables.

The mean comprehension scores for each reading level, interest and incentive conditions are shown in Table 1. The analysis revealed

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Insert Table 1 about here

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two main effects, with a significant reading level effect $F(1,74) = 5.61$, $p < .02$, showing that below-average readers were scoring higher, and a significant incentive condition effect $F(1,74) = 13.55$, $p < .001$, with the reinforcement group scoring higher. There was no main effect for interest. Thus Hypothesis I was not supported, but Hypothesis 2 was.

No significant two-way interactions, reading level x interest, reading level x incentive condition, interest x incentive condition were found nor was the three-way interaction reading level x interest x incentive group significant. Hypotheses 3 and 4 were thus not supported.

Since there was no significant main effect for interest, eight groups were collapsed to four groups for better interpretation, as shown in Table 2. There were no significant main effects or interactions found for the reading times.

Insert Table 2 about here

Our findings supported hypothesis 2 that external incentives enhance reading performance for average as well as below-average readers. Some studies reported that external reinforcement increases quantity but not

quality of performance. Our study did not support this claim as comprehension scores, a qualitative measure, increased under external reinforcement conditions, but reading time showed no relation to the incentive condition. The incentive in the study, was a criterion contingent reinforcement, emphasizing the subject's competency in reading and giving evaluative information concerning that competency. The finding is in congruence with social learning theory, claiming that it is not the reinforcement per se, but the meaning implied by the reinforcer that is salient. If the meaning implies competency or skill it will increase a person's level of interest in the subject matter as well his/her quality of performance (Bandura, 1977).

Hypothesis 1 was not supported since interest in story content was not a significant factor in the study. It must be noted that the control groups in the low-interest story content scored lowest on reading comprehension. However, for some unexplained reason, the control high-interest group scored very low too, so there is no clearcut relation discernible.

Contrary to our expectations reading level was a significant factor in the study showing a main effect. All below-average reader groups had higher comprehension scores than did the average readers in reinforcement as well as control conditions. While we had hoped to keep our task level of difficulty constant for average as well as below-average readers, the data indicated that the task for the below-average reader was easier. There was no significant difference in the reading times for the groups, however.

One of the problems encountered in the study was the wide variability among students within each condition, which may have obscured the possible relationships sought. This may be due to classification procedure for obtaining student's reading level. We asked teachers to rate their

students as average or below-average readers. At that time of the experiment the California Achievement Test scores were not yet available. When CAT scores became available after that data were collected the samples reading scores ranged between second and seventh-grade. Although teachers had ranked students similarly as did the test, the reading range was much wider.

Similarly the interest procedure although modeled after that of Stevens, seemed not to connect with the children's interests and thus needs some rethinking before interest is abandoned as a possible influence on reading comprehension.

In summary, despite its exploratory nature the study has demonstrated that contingent reinforcement enhances reading performance for both average and below-average readers. The other relationships tested need further study.

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Table 1: Mean Comprehension Scores for the Eight Groups in the Study

	I N T E R E S T			
	H I G H		L O W	
	Incentive		Incentive	
	Reinf.	Control	Reinf.	Control
Average Readers	30.18	25.98	29.43	22.86
Below Average Readers	32.10	29.31	32.43	26.88

Reading Level F (1, 74) = 5.613, sign. $p < .021$

Interest F (1, 74) = 1.362 (nonsignificant)

Incentive Group F (1.74) = 13.55 sign. $p < .001$

Table 2: Mean Comprehension Scores for the Combined Four Groups in the Study

	I N C E N T I V E	
	Reinf.	Control.
Average Readers	29.83	24.57
Below-Average Readers	32.25	28.08